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will do much to strengthen a weak memory." This should not excite too much hope in the student. William James, of Harvard, in his *Principles of Psychology*, Vol. I, p. 663, says: "No amount of culture would seem capable of modifying a man's general retentiveness."

One of the most helpful ideas is found in chap. viii. In speaking of the numerous shades of pausing, the author observes that they "must be determined by the thought, the occasion, and the speaker's intelligence."

The book is a suggestive and helpful volume, carefully planned with the idea of giving the learner a small amount of theory with a large amount of intelligent, directed practice. There are many cogent ideas succinctly stated. For example, "What the speaker sees in his imagination is likely to be shared by his auditors." "The speaker must test and criticize over and over again the work of his voice, gesture, and expression, until he is thoroughly satisfied as to its accuracy and dependableness." "The habitual use of language and manner of expression in daily conversation will greatly influence a speaker's style in public address." "Simplicity is characteristic of all great art." "Simplicity . . . [means] . . . sincere, direct and spontaneous effort." "In all successful oratory there must be a clearly defined aim and purpose."

The many valuable points brought to the student's attention are well worth the serious consideration of those for whom this book has been painstakingly prepared. The general suggestions on p. 214 are particularly useful.

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The Teaching of Mathematics. By, J. W. A. YOUNG. New York: Longmans, Green & Co., 1907. Pp. xviii+351.

In the preparation of this book the author has kept in mind the prospective as well as the experienced teacher of mathematics. He has omitted the historical aspect of the subject and the presentation of model lessons to pupils, confining himself to illustrative use only of subject-matter. He has further restricted himself in the main to conditions as they exist in the United States. The book is comprehensive and stimulating throughout, and is perhaps the most helpful book on the teaching of elementary mathematics that has been published in this country. It ought to be in the library of every teacher of mathematics and of every school superintendent.

In the introductory chapter on the "Study of the Pedagogy of Mathematics" the author states that no antecedent work in the fields of psychology, philosophy, or logic is presupposed in what follows; and, indeed, there is an absence of sharp, clear-cut, psychological discussion of methods of teaching, in places where the reader would profit by it.

The chapter on the "Value of the Study of Mathematics" discusses the subject under four headings: Its utilitarian values; as a fundamental type of thought; as a tool for the study of nature; as exemplifying especially well certain important modes of thought. The discussion is comprehensive and forcible. The teacher will do well to read the chapter occasionally, and to read portions of it to his classes.

Chapter iv presents a brief discussion of methods and modes, defining and stating the value of the analytic and synthetic, of the inductive and deductive, of the Socratic and of the heuristic, and laboratory methods; also of the different modes of presentation of the subject-matter to the pupils.

The following, which is given in italics as the test of the best mode, seems entirely inadequate: "If the mode used is such that the pupil makes no more progress than he would have without a teacher, this on the face of matters condemns that mode under those circumstances." This chapter furnishes the general basis for the more detailed study of the heuristic and laboratory methods, and the individual mode in the chapters following.

The treatment of the heuristic method and individual mode is clear and practical, defining them, stating their value, summing up their advantages and disadvantages, and giving the verdict of experience with regard to them. "It is the function of the teacher and of the text so to present the things to be done, so to propose the problems to be solved," etc. (p. 70). Does modern psychology approve of that statement? Is it not rather one function of the teacher so to handle his subject that the pupils themselves will propose as many as possible of the problems to be solved, and if they do, will they not attack them with greater avidity and success? The following, which is commended, is given as an example of the true heuristic method: "What sort of a figure is $ABCD$? What do you know about the diagonals of such a figure? What lines in the figure are therefore equal? How does this knowledge help us in our main problem?" A critical investigation of such a method would show that such a series of questions tended to cripple the mental powers of the class and was only justifiable when they failed to get results from a method of approach that gave them credit for some observation and insight.

A long chapter is devoted to "The Laboratory Method" which evidently has the approval of the author. Its keynote is interest, its dominating thought the method of nature which finds the clue to interest, not in the subject-matter, but in the child's instinct to do—to exert his powers. Emphasis is placed on the necessity of correlating the mathematical subjects among themselves and relating mathematics to actual experiments involving calculation. The importance of graphic representation is dwelt upon.

There are many important chapters, which through lack of space we must omit to notice. The chapters on the "Teaching of Arithmetic," "The Teaching of Algebra," and "The Teaching of Geometry" are sane, practical, and full of suggestion. Teacher's should read and re-read the quotation from Walker's *Discussions on Education*, as to the demand in actual life for rapid and accurate computation. And also, as given here, Still's *Report* to the N. E. A. in 1900, of what the business world believes it has a right to expect from the study of arithmetic in school.

In noting the different views held by thinkers regarding the real nature of the number concept the author states that they play no further part in the direct work of instruction. In this we think he is in error, and that there is a very close relation between the underlying theory and the method, if worked out consistently.

In his discussion of the teaching of geometry the author emphasizes his belief that geometry should be taught, "not as a collection of settled facts to be

learned . . . but as a set of phenomena to be investigated scientifically." The chapter is written from this standpoint and is accordingly stimulating and suggestive. An ample bibliography precedes each chapter.

In conclusion, it may be stated that while this book still leaves room for a briefer work on the teaching of mathematics from the psychological standpoint, yet it is able, sane, practical, suggestive, and stimulating, and the teacher of mathematics cannot well afford to be without it.

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Das Buch vom Kinde. Ein Sammelwerk für die wichtigsten Fragen der Kindheit unter Mitarbeit hervorragender Fachleute herausgegeben von ADELE SCHREIBER. Leipzig and Berlin: B. G. Teubner, 1906. 2 vols. Pp. xxv+887.

This co-operative work on the "weightiest questions concerning childhood" is described by its editor as "a guide, a true leader into childland. It gives instructions for the care of the body and the soul of the child. It discusses all the weighty problems of home education, and offers abundant counsel concerning occupation and education from earliest childhood to maturity. Far-seeing specialists discuss in it the reform of the school system and of the legal protection of childhood. The profoundly important question of the choice of vocation for boys and for girls is most thoroughly treated."

It is intended not only as a help to those parents and teachers who in some bewilderment are seeking for knowledge in the voluminous literature of the subject, but also as a means of arousing to a sense of their responsibilities the "numberless others" who "still live thoughtlessly, without having understood the immense significance of the word education."

The book deals almost exclusively with present conditions and tendencies to reform in Germany. Its value to American readers lies in the information which it yields on these matters, in its exhibition of the number and complexity of the problems relating to the care of children, and in its suggestiveness as to variations and improvements in our own activities in this field. It gives, moreover, abundant evidence of the existing defects in German education, and of the great improvements which have occurred in Germany during the last fifteen years. Especially notable among these last are the greater attention to individual needs, and the better care of unfortunates.

The work consists of ninety-five articles, contributed by seventy-nine writers. It is unusual, if not unique, among books on childhood, in the variety and professional standing of its contributors, among whom are university professors, teachers in various regular and special schools, doctors of medicine, jurists, and other state officials. It is provided with nearly two hundred illustrations—half-tone reproductions of photographs, woodcuts, and prints in color—and the whole is given artistic form through beautifully clear large type, numerous unique decorative designs, and full-page drawings of child life.

The unusual character of the book perhaps justifies the necessarily dry analysis of its contents. The various subjects are classified under four main heads: I, "The Body and the Soul of the Child;" II, "Education;" III, "The